

FOXPRO 2.0

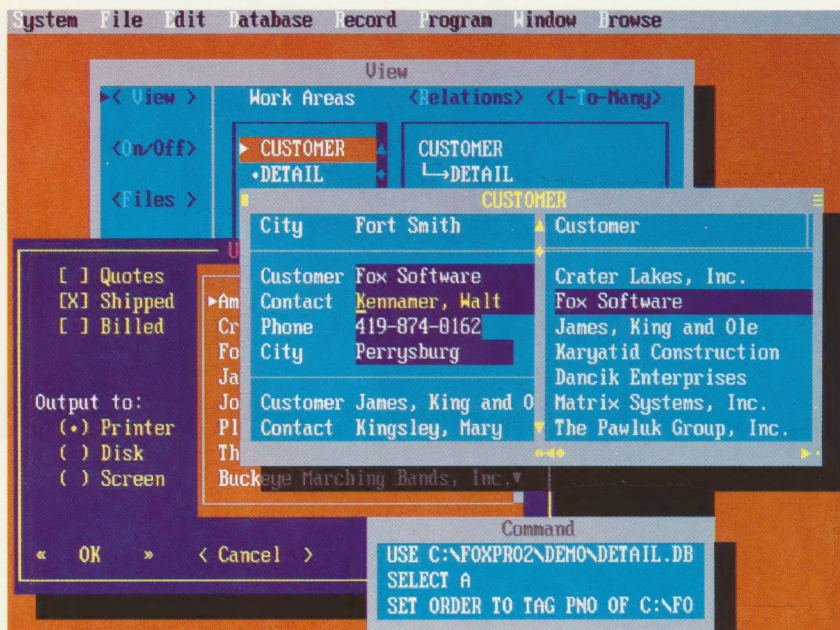
If your primary criterion for a database is performance, you need look no further than FoxPro 2.0. But that's not its only selling point. FoxPro has a lot to offer casual users and developers alike. The interface includes pull-down menus—along with a convenient command window—so you can use menus or type commands without either interface getting in the way of the other. Mouse support is the best of any character-based package we've worked with. The command window keeps a running history of FoxPro instructions. This makes it easy to repeat commands used throughout a session. You also can select portions of the command history and paste them into your applications. If you trigger operations from the menu options, FoxPro places those instructions in the command history—a great tool for building applications. You can perform an operation using FoxPro's menus, capture instructions from the command history, and paste them into a program file.

FoxPro made child's play of our project. To create the data-entry screen, we opened the databases and set up the necessary relationships. FoxPro's View Window assisted these setup chores. The window graphically depicts available work areas; you can select a work area and open a database in it by clicking on a command button. FoxPro provides a list of databases from which to choose. After loading the three databases we needed, we highlighted the orders database and

selected the command button to set a relationship between it and the parts database. FoxPro offered a dialog box with a list of key fields. We selected the stock number field to link the two databases. Because we would need to repeat this operation later when writing code for the batch-order test, we called up the command window, copied the commands generated in the operation, and pasted them into a program file.

When we designed the input screen, the screen generator saved environment information. We didn't have to worry

about opening databases first and setting up the relationships. The screen builder starts off as a blank screen in which you can enter text and place fields. You also can create command buttons, check boxes, "radio" buttons, and pop-up lists. And you can attach pieces of code to any object, including the fields. From the setup screen, you can designate code to run before and after the screen-entry program. When you generate code for the screen you've designed, you can attach other screens to it, which saves you time once you build a library of generic



Feature

Event-driven, multi-window interface provides the benefits of a Graphic User Interface in DOS ☒
Fourth Generation Language (4GL) Tools for creating screens, reports, menus, applications ☒
Object-oriented screens, buttons, lists, etc. ☒
Object classes reusable in many applications ☒
Ultra-high-performance SQL & querying ☒
Exit and entry procedures for windows, forms and fields for pre- and post-processing of data ☒
Runs dBASE applications far faster than dBASE+ ☒

FoxPro 2.0 dBASE IV Paradox

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Feature

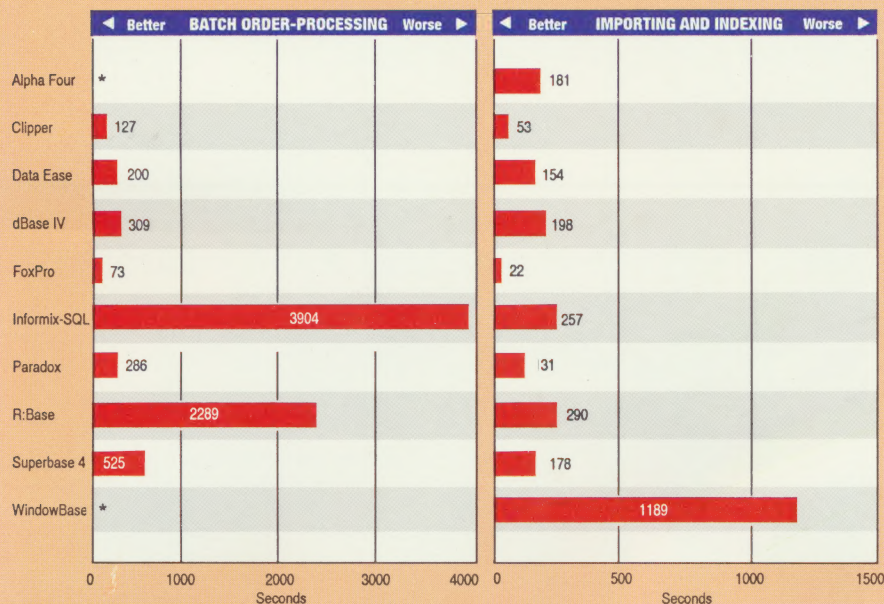
True 32-bit operation on 386/486 ☒
Simultaneous data entry and query on a table ☒
API for linking to C and assembler functions ☒
.EXE generation with optional kit ☒
Unlimited memo field size ☒
Store any type of data in memo fields, including graphics, digitized sound, etc. ☒
One-to-many-to-many relations ☒
Supports Netware, LAN Manager, VINES ☒
Share data on a DOS/Mac network ☒

FoxPro 2.0 dBASE IV Paradox

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‡ Paradox, like Clipper 5.0 from Nantucket Corp., does not run dBASE IV applications.

BENCHMARKS



For the Importing and Indexing benchmark, each program had to create a 4000-record database of parts information from an ASCII file. The Batch Order-Processing benchmark tests the time it took each package to post a batch of 800 orders and update three separate database files. In each case, FoxPro displayed the most impressive performance.

screens. We simply added a control screen included in the tutorial for navigating through records, adding a command button for processing an entry and attaching code to update the parts database and the salesperson database each time an order is entered.

The easiest way to create the reorder report was to build a query first. To do this, we opened a new query screen and selected the company database and the parts database for our query. A dialog box, which included three blank boxes, prompted us to enter the linking criteria. Clicking on the box on the right brought up a list of fields in the parts database, while the left box offered fields from the company database. The middle box provided a choice of relational operators (like, less than, and so on). With a few clicks of the mouse, we had created a

simple query. Next, we selected the fields we wanted to include, grouped the query by company name, and sent the result to a report. When we ran the query, FoxPro generated a report file, which we could call up from the report builder for reformatting. As in the screen builder, we could drag text and fields around with the mouse or group information and then move it. To keep track of running totals, we defined a couple of variables and put them in the group footer and the page footer. A query is saved as a program file and since a formatted report is part of the query, you can generate the final output directly from the command line by invoking the DO command and using the filename as an argument, or you can include the command sequence in an application.

1991

BYTE

AWARD

OF

EXCELLENCE

FoxPro 2.0, Fox Software

FoxPro is the acknowledged speed leader among dBase-compatible database programs and deserves the 1991 "most improved" award for its remarkable version 2.0. A new retrieval technology called Rushmore crunches through million-record databases with stunning speed. Other major enhancements include compressed compound indexes, a Structured Query Language subsystem, a WYSIWYG screen builder, a project manager, an interface to Watcom C, and an extended-DOS version.

FoxPro was a barn burner on our performance tests, thanks mainly to FoxPro's proprietary Rushmore technology. Our one complaint about the package is its unwieldy documentation. Finding information quickly was a problem, but a strong on-line help facility got us through the rough spots. FoxPro is simply an outstanding product.

Still, if you like the power and maturity of the dBase language, FoxPro is the better product.

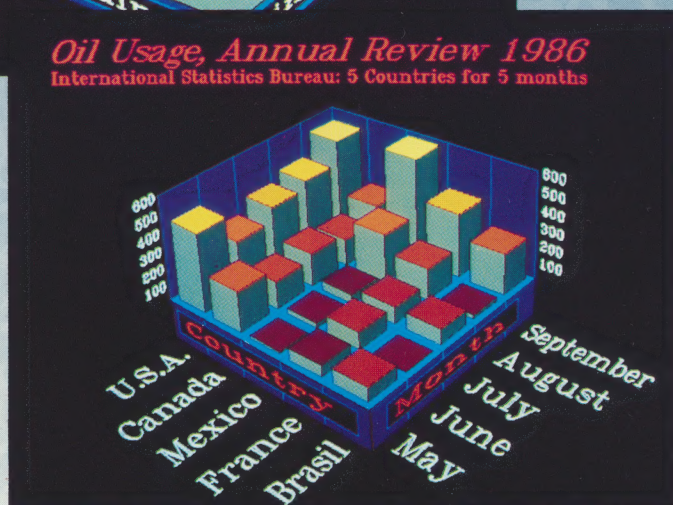
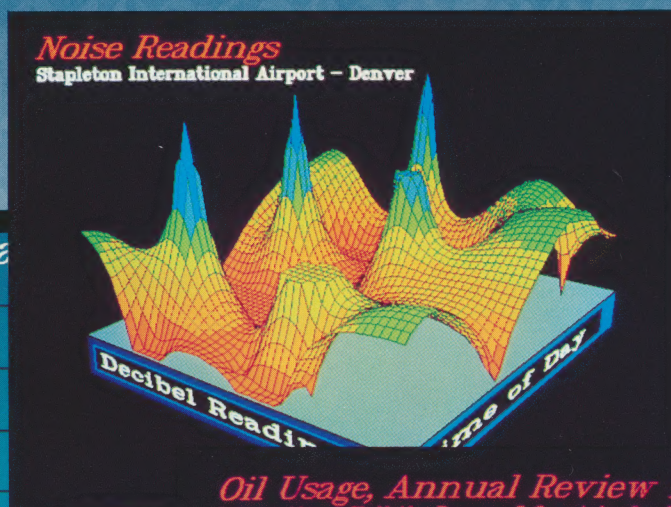
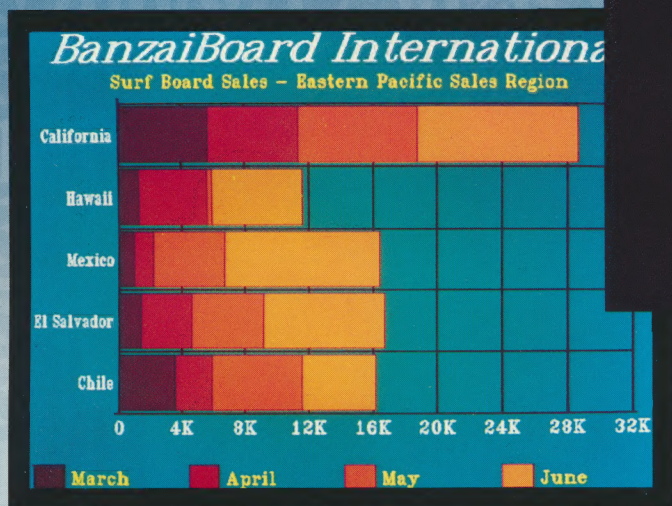
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 **FOX**
SOFTWARE

Create spectacular business graphs from your FoxPro data.



FoxGraph

FoxGraph brings your business and scientific data to life

by creating full color displays that make patterns, trends, and relations easier to see and understand. FoxGraph creates graphs from FoxPro, FoxBASE+, dBASE IV, dBASE III PLUS, and dBase data files.

2-D Graphics

Choose from 15 two-dimensional graph types. You control color in all graph areas, backgrounds, boxes, and lines. Adjust the width of bars, delete and detach slices of pie charts, and automatically adjust the roundness of your pie.

3-D Graphics

Select from 32 three-dimensional graph types and display each in any of 16 different viewing angles. Control colors, adjust the size of bars, risers, walls, and grids. For the best presentation of your data, FoxGraph automatically adjusts your graph elements to fit within screen borders.

Custom options are available for more demanding situations. Continually adjust the shape, size, and viewing angle of your graph with interactive rotation and translation capabilities, zoom and pan controls, and even distortion and axis length controls. Cycle through title options and adjust the walls, grids, and risers of your graph. Use one of several data reversal options to get just the right perspective on your data.

Special Interface

A special interface links FoxPro and FoxGraph to simplify the process of choosing and configuring the graph you want. A main menu allows you to set up and draw graphs, access on-line help, load and save graph definition files, and create or activate macros. A Function Key menu system helps you navigate easily through FoxGraph's many options.

Additional interfaces are included for FoxBASE+, dBASEIII PLUS, dBASE IV, and dBaseXL, making data conversion to FoxGraph a snap!

Data Manager

The Data Manager resembles a spreadsheet, and is used to store and manipulate text and numbers.

Enter data directly into the Data Manager, or import data using industry standard data and image file formats. Modifications such as inserting rows and columns, changing a title, or altering a number can be made right in the Data Manager.

Use arithmetic operators, mathematical functions, trigonometric functions, and special data summary

functions to build math equations that calculate the values of single cells, entire rows and columns, specific blocks of cells, even your entire database!

And because the Data Manager stores the data for every graph you produce, you never need to re-enter data to generate a different type of graph.

File Formats

FoxGraph supports an extensive range of data, image, and desktop publishing file formats. Import data using industry standard file formats. Export the screen image of any graph as an .IMG, .PCX, or .SCR file. Create bit-mapped .IMG files for use with Xerox Ventura Publisher, and .TIFF files for use with Aldus PageMaker. FoxGraph is even compatible with the Polaroid Palette Plus slide generation program.

Printing and Plotting

FoxGraph supports an extensive array of dot-matrix, ink jet, and laser jet printers. Drivers are included to produce graphs on almost any model plotter. Four printer paper sizes guarantee a quick and effortless transition from screen to paper.

Color Support

FoxGraph provides maximum color flexibility. Adjust graph colors by row, by column, or by page. A spectral mapping option lets you differentiate graph height using colors. Optional label coloring is also available.

Macros

Use macros in FoxGraph to record and save keystroke sequences for later use. Create macros that plot and save files, perform file conversions, or print monthly reports. Macros can save you time on frequently used procedures and can automate certain operations.

Price

Like all Fox Software products, FoxGraph combines speed, power, and flexibility with a low price—only \$295! (Single-user version only.)

FREE Demo

Call Fox Software at (419) 874-0162 now and we'll send you a free FoxGraph demo package. Try it and see for yourself how FoxGraph can turn simple facts and figures into astounding 2-D and 3-D graphics!

System Capabilities and Requirements

Data Summary Functions

sum()	Total a range of numbers
ave()	Average a range of numbers
min()	Minimum a range of numbers
max()	Maximum a range of numbers
sdev()	Standard deviation of a range of numbers
var()	Variance of a range of numbers
sum2()	Total the square of numbers in a range
count()	Count the cells in a range that have numbers

Mathematical Functions

sqrt()	Square root of a number
log()	Base-10 logarithm of a number
ln()	Natural logarithm of a number
exp()	e raised to a power

Trigonometric Functions

sin()	Sine of an angle (radians)
cos()	Cosine of an angle (radians)
tan()	Tangent of an angle (radians)
asin()	Arc sine of a number (radians)
acos()	Arc cosine of a number (radians)
atan()	Arc tangent of a number (radians)

Arithmetic Operators

+	Add	*	Multiply
-	Subtract	/	Divide
**	Raise to a Power		

Plotter Paper Sizes

8.5" x 11"	17" x 22"	34" x 44"
11" x 17"	22" x 34"	

Printer Paper Sizes

Standard (8.5" x 11"), Legal (8.5" x 14"),
A4 (8.268" x 11.643"), Wide (11" x 14")

Data File Types Supported

.DIF	DIF files	.ASC	Boeing Calc files
.SLK	SYLK files	.WKS	Lotus 1-2-3, Version 1A
.DAT	ASCII files	.WK1	Lotus 1-2-3, Version 2
.3DT	FoxGraph files		

Image File Types Supported

.IMG	The default, GEM Paint format
.PCX	PC Paintbrush file format
.SCR	EGA Paint format, uncompressed

Hardware (one of the following):

- IBM PC, IBM PS/2, Compaq, or 100% compatible
- Toshiba 3100 or Compaq Portable with high resolution plasma screen
- AT&T 6300/6300+

Also Required:

- Minimum 512K memory
- One floppy disk drive and one hard disk with minimum 1.5M disk space available
- DOS 2.0 or greater

Graphics Cards (one of the following):

- IBM or Compaq CGA, EGA, VGA, or 100% compatible
- Hercules Monochrome Graphics or 100% compatible
- Super EGA with 640 x 480 or 752 x 410 resolution
- Built-in graphics supplied with the Toshiba 3100, Compaq Portable, or AT&T 6300 Series

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Fox Software, Inc.

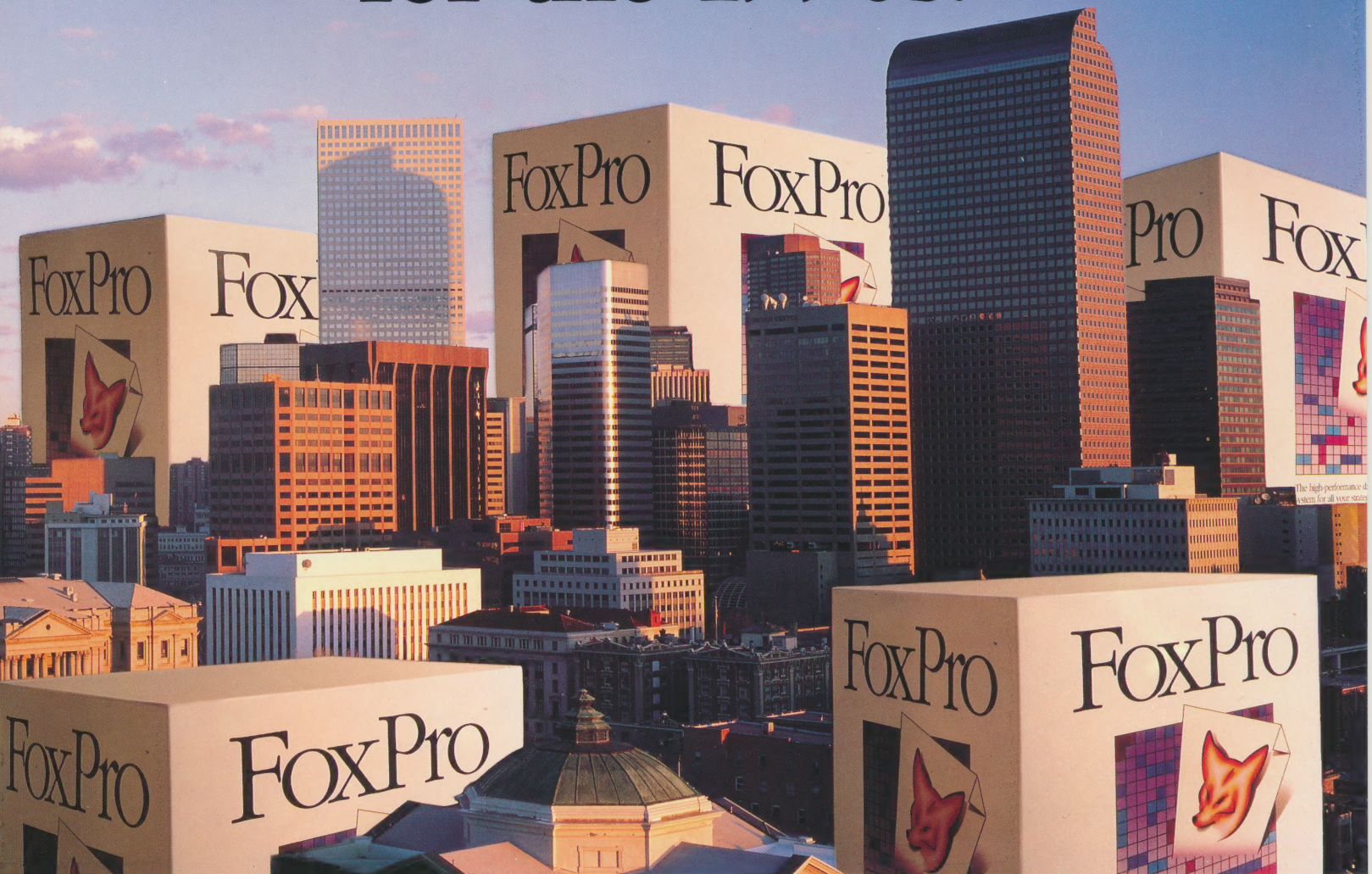
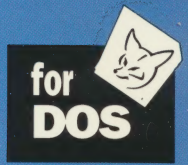
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The relational state-of-the-database-art for the 1990s.



FoxPro 2.0

FoxPro 2.0 is the first release of a new generation of products from Fox Software for your business database management systems in the 1990s.

While advancing PC DBMS performance by orders of magnitude, FoxPro 2.0 also delivers on the promises you have been hearing from others of an event-driven, object-oriented database management system. And FoxPro 2.0 does so today on your present DOS PCs to protect your investments in hardware, software, training and support. You gain a major increase in performance and compatibility today and interconnectivity for your information needs tomorrow.

We think you'll find this is the relational DBMS you've been waiting for.

FoxPro delivers the next-generation business DBMS. Today. In DOS.

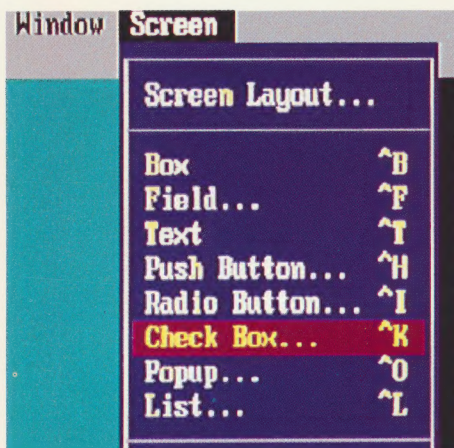
FoxPro 2.0 delivers power formerly available only on minis and mainframes for your present DOS PCs.

It is ideal for single-user and networked applications. For order entry, accounting and sales database systems. For your decision-support and mission-critical needs. And all the other data management you deal with every day.

FoxPro is an object-oriented, event-driven DBMS. Today.

While others promise, we delivered our first object-oriented, event-driven DBMS in 1988 with FoxBASE+ for the Macintosh and received rave reviews.

Patterned on this, we created FoxPro 1.0 for DOS and it "...succeeded dBASE as the industry leader in innovation, power and speed."
(PC Week 5/28/91)



FoxPro 2.0 is even faster, more powerful and more innovative, and is solidly based on years of experience in business applications around the world.

All this technology has a point.

What all this talk of objects and events and innovation really means is that users get the benefits of a Graphic User Interface (GUI) on their DOS PCs without having to pay the cost or speed penalties of Windows.

Developers get the ability to quickly produce powerful new applications, then reuse standard components they have created in new applications.

And everyone gets the performance advantages of our revolutionary query and interface technology.

Fourth Generation Language (4GL) Tools harness the power.

Our innovative 4GL tools make using FoxPro 2.0 easy for end-users and developers.

To build an input or output screen, select the objects you need from a pulldown menu using keyboard shortcuts or a mouse. Buttons, check boxes, popups, scrolling lists, text regions and data fields for your screen are just a pick or click away. Then drag these objects where you want them, add any text you need and let FoxPro write the code.

The screens you create are objects, too, and you can combine them into compound screen objects just as easily, or reuse them in other applications.

And our reports, labels and menus are built the same way.

RQBE makes answers easy, Rushmore™ makes them fast.

With our new Relational Query By Example (RQBE), what might have been tackled as a "multi-table join" in the past is now a matter of interactively picking the fields you want to see from the tables you want to use, and specifying conditions and common fields.

Click on the Query button (or use the keyboard), and our patent-pending Rushmore Query Optimization gets your answers right now. As the charts show, performance is phenomenal.

And unlike other query systems, you can use RQBE to browse an answer table, or to create a new database, report, labels or a business graph (with optional FoxGraph or other graphic program). And you can save your query, then run it again by selecting its name.

FoxPro is the superset of dBASE needed for the 1990s.

FoxPro technology is a significant leap into the future of database management systems, but we haven't forgotten the past.

So FoxPro 2.0 is language-compatible with—and improves the performance of—applications already written in dBASE III+/IV and earlier Fox products.

You don't have to scrap your data management systems investments, and you don't have to change the way you do business as you would if you went to a new platform or product.

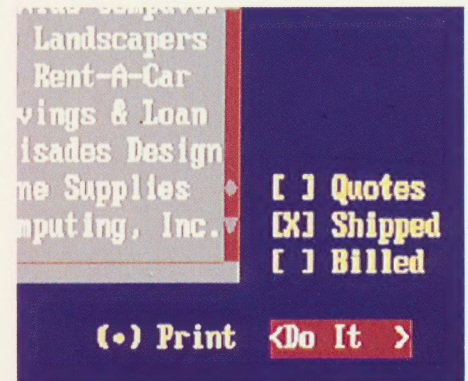
The power doesn't stop.

There's more, for end-users, VARs, developers and businesses of all kinds.

Behind its friendly exterior, RQBE creates an efficient SQL SELECT statement you can add seamlessly to your applications. And do the same with our new SQL INSERT and CREATE TABLE commands, too.

Our LAN version is the fastest available. It works with data files created by FoxBASE+/Mac and SCO FoxBASE+ under Xenix and UNIX, so you have

cross-platform compatibility today, and will have application portability when we release FoxPro for the Mac, Windows and UNIX (to be announced—and we're working on a client/server, too). And it's the most economical network solution today.



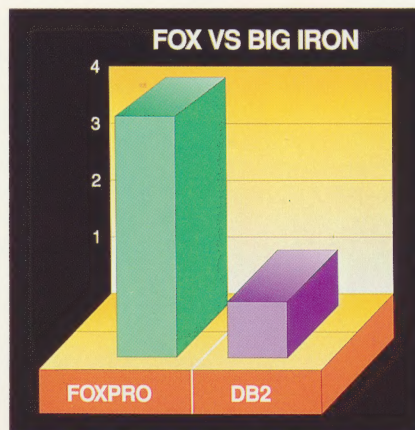
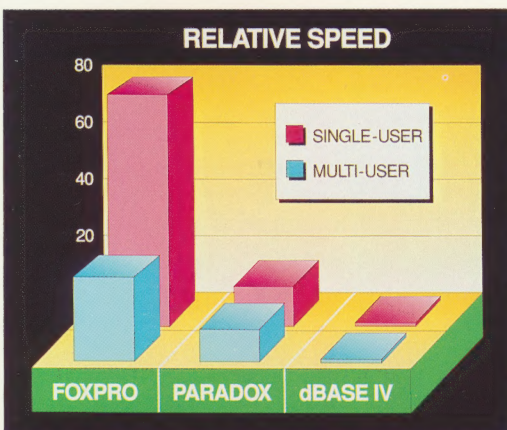
FoxPro includes standard and 32-bit versions, so you can run on any PC or get the most out of a fully-extended, high-performance 486.

Our Application Program Interface (API) provides an open architecture for libraries of functions written in assembler or C. (Optional Library Construction Kit for C available.) Currently, third parties are developing libraries for client/server access, communications and other functions.

There's more, and we've summarized some of the highlights in the box.

But the best way to check out FoxPro 2.0 is on your own computer, running your own applications. Drop by your nearest computer store and pick up a copy today.

We think you'll find that FoxPro 2.0 wrings performance out of a PC that no one else seems to have known was there.



When you have questions, FoxPro 2.0 is the answer. Query response is far faster than with dBASE, Paradox or a raw compiler like Clipper. And far faster than DB2, XDB, Oracle and other mainframe databases.

(Query tests performed by Micro Endeavors, Inc. (215) 449-4680. Published in Data Based Advisor 8/91.)

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Highlights that make FoxPro 2.0 today's strategic DBMS choice:

- Runs industry-standard dBASE III+/IV applications and is orders of magnitude faster than any other PC DBMS or compiler.
- Patent-pending Rushmore™ Query Optimization is up to hundreds of times faster than competitors, with power to justify downsizing mainframe applications.
- Object-oriented, event-driven operation simplifies information systems for users and developers now, will allow applications to run under Windows and Mac versions when released (to be announced).
- Users get the benefits of a graphical user interface on their current DOS PCs and compatibles.
- Relational Query By Example (RQBE) makes it easy to ask sophisticated business queries, then Rushmore quickly provides the answers. Also creates SQL statements that can be used directly in programs.
- Fast SQL SELECT, INSERT, CREATE TABLE commands are integrated into the language.
- Over 100 new and enhanced commands and functions, including one-to-many-to-many relations, new array functions and a new BROWSE FOR command powerful enough to be the basis of an application itself.
- Fourth Generation Language (4GL) Tools include object-oriented Screen Builder, Report and Label Writer and a Menu Builder for creating applications quickly. FoxPro writes the code, and these objects it creates can be reused from application to application.
- Entry and exit procedures for fields, forms and windows extend the power by allowing conditional pre-processing and post-processing for setup, data validation, etc.
- Enhanced developer environment includes editor, trace and debug plus a new Project Manager that greatly reduces development time.
- Keyboard macro editor creates and edits macros and scripts.
- Application Generator creates complete applications without programming.
- New indexes are up to 80% smaller, much faster, put no limits on ordering data.
- Multi-user version includes automatic or programmable locking for data integrity.
- Small memory footprint, with demand paging and segment loading replacing overlays for faster, more efficient operation.
- Over 100 printer drivers provided, including Postscript output.
- Optional Distribution Kit creates stand-alone .EXE files for distribution of your applications with no royalties.
- Open architecture of Application Program Interface (API) provides access to external routines and libraries written in C or assembler. (Library Construction Kit optional.) Client/server access, communications programs and other libraries are currently under development by third parties.
- Extended mode 32-bit version included for maximum performance on 386/486 PCs and compatibles.

Specifications

	Standard	Extended
Open files (any type)	99	DOS limit
Active database files	25	25
Active indexes/database	Unlimited	Unlimited
Active indexes in all areas	Unlimited	Unlimited
Open windows	Unlimited	Unlimited
Active BROWSE windows	25	25
Procedures per file	Unlimited	Unlimited
Records per database file	1 billion	1 billion
Fields per record	255	255
Characters per field	254	254
Characters per record	4,000	4,000
Memo field size	Unlimited	Unlimited
Characters per command line	2,048	2,048
Size of memory variable strings	64K	2 gigabytes
Number of memory variables	3,600	65,000
Number of arrays	3,600	65,000
Elements per array	3,600	65,000
Nested DO calls	32	32

Data Types

Character (up to 254 per field) Numeric (up to 20 digits, 16-bit precision)
 Logical (T or F, Y or N) Date (American, European or ASCII format)
 Memo (any data type, any size, including images and digitized sound)

File Interchange

FoxPro 1.--
 FoxBASE+
 dBASE IV, III+

Read

✓
 ✓
 ✓

Write

✓
 ✓
 ✓

Import

✓
 ✓
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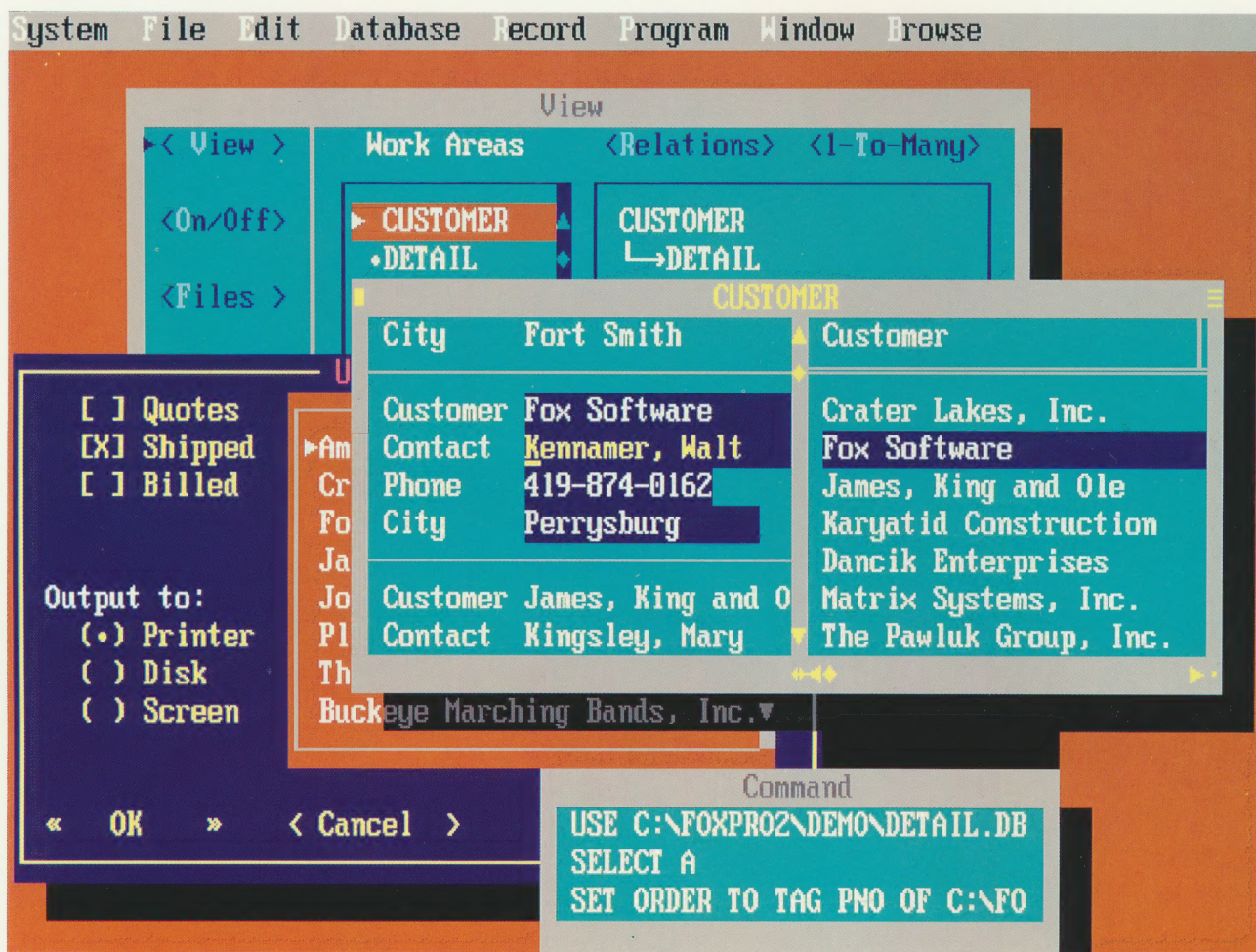
Export

✓
 ✓
 ✓
 ✓

Lotus 1-2-3 (versions 1 and 2)
 Lotus Symphony (version 1.10)
 Microsoft Excel (version 2.0)
 Microsoft Multiplan (all)
 Paradox
 Rapidfile
 Framework II

System Requirements:

- Single-user: Standard version requires IBM, Compaq, or compatible PC (8088/286/386/486), 512K RAM, MS/PC DOS 2.0 or higher, hard disk and one diskette drive. Takes complete advantage of any available expanded memory (EMS). Extended version requires 80386/486 processor, 1.5 megabyte RAM.
- FoxPro/LAN: Workstation requirements as above but with DOS 3.1 and without hard disk. Also requires network software that supports the NETBIOS interface and one hard disk drive on the server, IBM, COMPAQ, or compatible PC.



Object-oriented, event-driven FoxPro 2.0 simplifies data management for end-users and developers. In DOS. Today.

Rushmore query optimization gets your answers as much as hundreds of times faster than competitive products.

Object-oriented, event-driven operation means that you get the benefits of a Graphic User Interface (GUI) on your DOS PCs.

View window makes it easy to work with multiple tables of data, while RQBE (Relational Query By Example) simplifies the creation of business queries.

Event-driven operation allows you to work with any number of resizable, scrollable windows, get to all of your data all of the time.

4GL Tools (Fourth Generation Language) simplify the creation of Mac-like applications on your DOS PCs, using keyboard shortcuts or a mouse.

Runs your industry-standard dBASE programs today, lets you build on your current systems for your needs tomorrow.

